

Appl. No. 10/606,871

Amdt. dated February 25, 2005

Reply to Office Action of November 30, 2004

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A fastening device for temporarily fastening an electronic component to a circuit board, wherein the circuit board has a connecting hole, the fastening device comprising:

a base; and

at least two elastic plates formed integrally with the base and received in the connecting hole, the elastic plates each including a first portion, which is arranged outside a wall defining the connecting hole when the at least two elastic plates are received in the connecting hole, and a second portion, which extends diagonally relative to a plane of the circuit board when the at least two elastic plates are received in the connecting hole, the second portion having a section pressed against the wall of the connecting hole by the elastic force of the at least two elastic plates;

wherein the base and the at least two elastic plates lie at least substantially on a flat plane.

2. (Original) The fastening device according to claim 1, wherein the first portion includes a leg defined at a distal portion of the associated elastic plate, the leg becoming narrower toward its end.

3. (Original) The fastening device according to claim 1, wherein the base and the at least two elastic plates are made of metal, and the at least two elastic plates intersect each other.

4. (Original) The fastening device according to claim 1, wherein the at least two elastic plates intersect each other at the center of the fastening device.

5. (Original) The fastening device according to claim 2, wherein when the at least two elastic plates are free from deformation, the distance between distal ends of the elastic plates is smaller than the diameter of the connecting hole.

Appl. No. 10/606,871

Amdt. dated February 25, 2005

Reply to Office Action of November 30, 2004

6. (Currently Amended) An electronic component connected to a circuit board, wherein the circuit board has a connecting hole, the electronic component comprising:

a fastening portion for contacting a plane of the circuit board; and

a fastening device arranged in the fastening portion, the fastening device including:

a base; and

at least two elastic plates formed integrally with the base and received in the connecting hole, the elastic plates each including a first portion, which is arranged outside a wall defining the connecting hole when the at least two elastic plates are received in the connecting hole, and a second portion, which extends diagonally relative to the plane of the circuit board when the at least two elastic plates are received in the connecting hole, the second portion having a section pressed against the wall of the connecting hole by the elastic force of the at least two elastic plates;

wherein the base and the at least two elastic plates lie at least substantially on a flat plane.

7. (Original) The electronic component according to claim 6, wherein the first portion includes a leg defined at a distal portion of the associated elastic plate, the leg becoming narrower toward its end.

8. (Original) The electronic component according to claim 6, wherein the base and the at least two elastic plates are made of metal, and the at least two elastic plates intersect each other.

9. (Original) The electronic component according to claim 6, wherein the at least two elastic plates intersect each other at the center of the fastening device.

10. (Original) The electronic component according to claim 7, wherein when the at least two elastic plates are free from deformation, the distance between distal ends of the elastic plates is smaller than the diameter of the connecting hole.

Appl. No. 10/606,871

Amdt. dated February 25, 2005

Reply to Office Action of November 30, 2004

11. (Currently Amended) A structure for fastening an electronic component to a circuit board, wherein the circuit board has a connecting hole, the structure comprising:

a fastening portion defined in the electronic component to contact a plane of the circuit board;

a fastening device attached to the fastening portion to temporarily fasten the electronic component to the circuit board; and

solder for securely fastening the temporarily fastened electronic device, wherein the fastening device includes:

a base located in the fastening portion; and

at least two elastic plates formed integrally with the base and received in the connecting hole, wherein the elastic plates each include a first portion, which is arranged outside a wall defining the connecting hole when the at least two elastic plates are received in the connecting hole, and a second portion, which extends diagonally relative to the plane of the circuit board when the at least two elastic plates are received in the connecting hole, the second portion having a section pressed against the wall of the connecting hole by the elastic force of the at least two elastic plates;

wherein the base and the at least two elastic plates lie at least substantially on a flat plane.

12. (Original) The structure according to claim 11, wherein the first portion includes a leg defined at a distal portion of the associated elastic plate, the leg becoming narrower toward its end.

13. (Original) The structure according to claim 11, wherein the base and the at least two elastic plates are made of metal, and the at least two elastic plates intersect each other.

14. (Original) The structure according to claim 11, wherein the at least two elastic plates intersect each other at the center of the fastening device.

Appl. No. 10/606,871

Amdt. dated February 25, 2005

Reply to Office Action of November 30, 2004

15. (Original) The structure according to claim 12, wherein when the at least two elastic plates are free from deformation, the distance between distal ends of the elastic plates is smaller than the diameter of the connecting hole.

16. (Withdrawn) A method for manufacturing a fastening device that temporarily fastens an electronic component to a circuit board, the method comprising:

forming a punched product including a base formed integrally with two elastic plates, which extend from opposite sides of the base, by punching the base and elastic plates out from a metal sheet; and

bending the punched product so that the two elastic plates intersect each other at the center of the fastening device.

17. (Withdrawn) The method according to claim 16, wherein said forming a punched product includes punching out the metal sheet so that the two elastic plates extend parallel to each other.

18. (Withdrawn) The method according to claim 17, wherein said forming a punched product includes forming a leg on each elastic plate, the leg becoming narrower toward its end.

19. (Withdrawn) The method according to claim 18, wherein said bending includes folding the punched product so that when the two elastic plates are free from deformation, the distance between distal ends of the two elastic plates is smaller than the diameter of a connecting hole extending through the circuit board.

20. (New) The fastening device according to claim 1, wherein the second portion of the at least two elastic plates intersect in the form of an 'X' at the center of the fastening device.

21. (New) The electronic component according to claim 6, wherein the second portion of the at least two elastic plates intersect in the form of an 'X' at the center of the fastening device.

Appl. No. 10/606,871

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22. (New) The structure according to claim 11, wherein the second portion of the at least two elastic plates intersect in the form of an 'X' at the center of the fastening device.